

III. On a Photometer. By J. Templeton, Esq. Communicated by Captain W. H. Smyth, R.N.

This photometer consists in the application of a coloured medium through which the stars are viewed. The two limits of the scale are clear vision and complete obscuration. The author recommends two tubes, the one sliding water-tight within the other, and both closed with glass at the further end. Through these he looks at a star, and, pulling the inner tube out a little, he fills the vacant space with a solution of burnt sugar containing a little spirit, and continues this operation until the said star is entirely obscured. By means of a scale attached he sees how much of the inner tube he has had to pull out, *i. e.* how much coloured fluid it has required to hide the object.

✓ IV. The following comet-communications from Professor Schumacher.

1. Communication dated June 17: Observations of Colla's Comet.

Place of Observation and Observer.	Day.	Mean Solar Time at Place of Observation.	Observed Right Ascension of Comet.	Observed Declination of Comet.
Hamburg : M. Rumker.	1845. June 11	^h ^m ^s 12 59 4·9	[°] ['] ^{''} 94 57 21·8	[°] ['] ^{''} +44 43 5·0
	12	13 13 0·1	99 26 7·3	43 56 54·0
	13	13 25 13·4	103 29 6·8	42 59 44·5
	15	13 44 41·7	110 20 14·6	40 44 56·9
Vienna : M. Schaub.	June 7	12 42 45·2	^h ^m ^s 4 56 27·59	+44 51 53·9
Königsberg : M. Wichmann.	June 7	13 2 43	[°] ['] ^{''} 74 5 0·4	+44 51 9·4
Berlin : M. Galle.	June 9	12 26 35·3	^h ^m ^s 5 39 19·50	+45 28 6·7
	10	12 43 24·8	6 0 8·29	45 14 49·4
	11	12 58 56·3	6 19 38·89	44 43 22·6
	12	13 12 52·8	6 37 34·20	43 57 19·8
Altona : M. Petersen.	June 12	10 30 9·4	[°] ['] ^{''} 98 56 53·4	+44 2 31·4
		12 14 4·4	99 15 23·1	43 58 56·7

Professor Encke adds the following elements calculated from the Berlin observations of June 7, 9, 10:—

Dr. Brunnow.

Perihelion Passage, 1845, June 5^h 63^m 32^s 8
 Perihelion..... 262° 49' 3" } 1845° 0
 Node..... 338 41 32.5 }
 Inclination..... 49 12 56.5
 Log q 9.601902

M. d'Arrest.

June 5^h 718^m 54^s, Berlin.
 262° 1' 20.8" } 1845° 0
 337 49 21.5 }
 48 55 1.6
 9.603214

Retrograde.

2. Communication dated 1845, June 20.

Name of Comet.	Place of Observation and Observer.	Day.	Mean Solar Time at Place of Observation.	Observed Right Ascension of Comet.	Observed Declination of Comet.
Mauvais (Second).	Geneva: Prof. Plan-tamour.	1845. Feb. 4	^h ^m ^s 8 13 35.2	^h ^m ^s 2 58 4.82	—21° 56' 18.8"
		5	7 27 44.7	2 57 47.75	21 23 38.4
		27	7 27 36.0	2 59 9.25	11 53 46.0
d'Arrest.	Altona: Prof. Schu-macher.	Feb. 7	11 31 3.65	16 28 50.26	+60 55 26.6
		27	10 57 27.50	9 50 58.45	17 10 22.6
		Mar. 9	9 4 11.10	9 16 24.34	+ 0 0 52.8
		12	10 30 54.70	9 11 22.28	— 2 57 18.7
De Vico (Second).	Altona: Prof. Schu-macher.	Mar. 31	8 51 36.90	8 18 35.92	+ 8 3 43.4
		April 1	9 3 56.67	8 15 49.89	6 23 24.9
		2	8 57 29.00	8 13 15.55	4 46 58.3
		3	8 28 40.30	8 10 52.80	3 14 35.9
Colla.	Altona: Prof. Schu-macher.	June 10	Sidereal Time. 15 7 42.7 15 8 57.8	5 58 7.64	+45 17 9.0
Colla.	Göttingen: Prof. Gauss.	June 12	Mean Time. 13 12 59.9	99° 26' 5.4"	+43 56 53.6

The first three of the above sets of observations are cleared of refraction and parallax: the fourth set is cleared of refraction. No remark is made on the Göttingen observation.

3. Communication dated 1845, July 15.

M. d'Arrest has calculated the following elements of Colla's comet from three normal places of June 7, 11, 15.

Perihelion Passage, 1845, June 5^h 7216^m 48^s, Berlin Mean Time.

Perihelion..... 261° 59' 58.47" } Mean Equinox,
 Node..... 337 48 17.27 } Jan. o.
 Inclination 48 54 29.10
 Log q 9.6032599
 Retrograde.